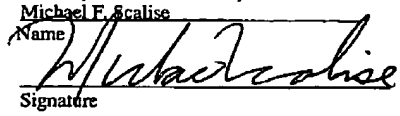
04645.1003

I hereby certify that this Correspondence is being forwarded to: Commissioner for Patents, Alexandria, VA 22313-1450, on February 13, 2004, via fax phone number 703-872-9306.
Michael F. Scalise
Name

Signature

February 13, 2004
Date of Signature

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:		Palazzo et al.
Serial No.	:	09/995,202
Filed:	:	Novemeber 27, 2001
For	:	Use Of Heat-Treated Electrodes Containing A Polyamic Acid-PVDF Binder Mixture
Examiner	:	R. Alejandro
Group Art Unit	:	1745

Assistant Commissioner for Patents
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

Sir:

Marcus Palazzo, one of the inventors in the above-referenced patent application, states as follows:

1. Marcus Palazzo declares that he is one of the co-inventors of the subject matter of the above-referenced patent application and is an applicant named therein.

2. That he earned a Bachelor of Science Degree in Chemistry from the State University of New York at Buffalo in 1995.

3. That he has been employed at Wilson Greatbatch Technologies, Inc., the assignee of the present application, from 1996 to present where he has gained extensive work experience in battery technology. This includes fundamental research in implantable battery anodes and cathodes, including rechargeable Li-ion and primary carbon monofluoride and silver vanadium oxide product lines. He is currently a Scientist II at Wilson Greatbatch Technologies, Inc.

4. That he believes the above educational training and work experience make him expertly qualified to opine with respect to matters related to the chemistry involved with the present invention.

5. That he has reviewed U.S. Patent No. 6,001,507 to Ono et al. cited in the office action dated October 15, 2003, as relevant prior art to the present invention.

6. That he believes Ono et al. is cited for teaching a non-aqueous electrolyte secondary battery, wherein the active material of at least one of the anode and the cathode has a binder integrated therewith. The binder is made of a mixture of polyimide in which conversion to imide has been completed at least before it is mixed with the depolarizing mix. When polyamic acid is heated to form an imide, water is generated, which "adversely affects the active material, as a result of

which the discharge capacity of the non-aqueous electrolyte battery and the cycling characteristic of the non-aqueous electrolyte deteriorate excessively." For this reason, Ono et al. believed it best to convert the polyamic acid to the polyimide and thereby drive off water before mixing the product polyimide with the electrode active material.

7. That he conducted tests comprising a sample of standard silver vanadium oxide (SVO) synthesized according to the procedure set forth in U.S. Patent No. 6,566,007 to Takeuchi et al., using silver nitrate mixed with vanadium oxide (V_2O_5) and heated to a final temperature of from about 490°C to about 520°C. The SVO was then dried at 140°C under vacuum for 18 hours. At this point, the product SVO sample was split into five groups for the following treatments:

Treatment A - for the control sample (0.2982g), no treatment was applied.

Treatment B - The SVO sample (0.2995g) was exposed to ambient atmosphere for 22 hours.

Treatments C and D - The SVO sample (0.2996g) was completely submerged and mixed in 0.1 ml of de-ionized water. The resultant slurry was separated into two samples, C and D. Sample C was air dried under ambient atmosphere for 22 hours (Treatment C). Sample D was allowed to soak for two hours prior to test (Treatment D).

Treatment E - A portion of control sample (Treatment A) was analyzed with 0.1 microliter of distilled water added directly to the sample container.

8. That the samples designated Treatments A to E were subjected to differential thermal analysis/thermal gravimetric analysis (DTA/TGA) scans obtained using a TA Instrument SDT2960. Test parameters included a ramp rate of 20°C/min to 620°C under a flow of argon at 110 ml/min.

9. That the test results are set forth in the table below and in the accompanying scans designated Exhibits 1 to 5, respectively. Accompanying Exhibits 6 and 7 are overlays of the TGA/DTA scans, respectively.

Treatment	SVO endotherm (°C)	SVO endotherm (°C)	Overall weight loss (%)
A	547.66	560.88	0.3
B	547.61	559.34	0.15
C	546.60	561.99	0.125
D	547.33	560.58	0.33
E	547.08	561.00	6.73

10. That, in my opinion, the addition of water did not effect the location of the standard SVO endothermic peaks. This suggests that no reaction between SVO and water has taken place. The treatment samples C to E containing the pre-addition of water also did not show a measurable increase in overall weight loss. This indicates that there is little, if any, absorption of water by the SVO compound. Treatment sample D (water directly added to sample chamber) shows the expected weight loss due to water, but again no reactions were noted by the location of the endothermic SVO peaks. The onset of weight loss due to water occurs at a temperature of approximately 50°C.

11. It is my opinion, that due to the relatively higher curing temperature of at least about 140°C used to make the presently claimed electrode and cell; there is very little, if any, water present in the electrode materials.

12. That, in my opinion, the Ono et al. prior art patent cited against the presently pending claims does not teach, much less suggest, building an electrochemical cell including an electrode characterized as having been made from an admixture of either a first electrode active material of the general formula $SM_xV_2O_y$ or a second electrode active material of the general formula $Cu_xAg_yV_2O_z$ mixed with a halogenated polymeric material as a first binder and a polyamic acid precursor of a polyimide second binder. The electrode active admixture containing the unconverted polyamic acid precursor is first press contacted to a current collector and then cured at a temperature of at least about 140°C, as set forth in the pending claims.

13. As an inventor signing below:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Signature

Marcus Palazzo

Date: February 11, 2004